

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 1. (Currently amended): In an optical communication system comprising a
2 plurality of optical transmission devices, a method for monitoring optical transmission paths
3 provided by said optical transmission devices, said method comprising:
4 in an optical transmission network administration device, designating a first
5 optical transmission path to be monitored, a second optical transmission path to be monitored
6 that is different from said first optical transmission path, and a third optical transmission path to
7 be monitored that is different from said first and said second optical transmission paths;
8 identifying a first optical transmission device that is at the beginning of said first
9 optical transmission path;
10 identifying a second optical transmission device that is between the beginning and
11 the end of said second optical transmission path; and
12 identifying a third optical transmission device that is at the end of said third
13 optical transmission path;
14 receiving-transmitting a first instruction signal of a first type at a from said optical
15 transmission network administration device to said first of said optical transmission devices,
16 wherein said first instruction signal instructs said first optical transmission device to combine a
17 first monitoring information signal with a received transmission signal;
18 receiving-transmitting a second instruction signal of a second type at a from said
19 optical transmission network administration device to a second of said optical transmission
20 devices, wherein said second instruction instructs said second optical transmission device to
21 transmit a received monitoring information signal to another optical transmission device;
22 receiving-transmitting a third instruction signal of a third type at a from said
23 optical transmission network administration device to said third of said optical transmission

24 devices, wherein said third instruction signal instructs an optical transmission device to process a
25 received monitoring information signal;

26 receiving a first transmission signal at said first optical transmission device and in
27 accordance with said first instruction signal, combining a said first monitoring information signal
28 with said first transmission signal to produce a modified first transmission signal and
29 transmitting said modified first transmission signal to ~~one of said~~ an optical transmission devices
30 in said first optical transmission path, said first monitoring information signal representative of
31 first optical transmission path monitoring parameters;

32 receiving a second transmission signal at said second optical transmission device
33 and in accordance with said second instruction signal, transmitting said second transmission
34 signal to ~~one of said~~ an optical transmission devices in said second optical transmission path, said
35 second transmission signal comprising a second monitoring information signal representative of
36 second optical transmission path monitoring parameters; and

37 receiving a third transmission signal at said third optical transmission device and
38 in accordance with said third instruction signals, performing end-point processing ~~based on a~~ on
39 said third monitoring information signal contained in said third transmission signal, said third
40 monitoring information signal representative of third optical transmission path monitoring
41 parameters.

1 2. (Original): The method of claim 1 further including receiving user input
2 representative of said first, second, and third optical transmission path monitoring parameters.

1 3. (Original): The method of claim 1 wherein a first portion of said first
2 instruction signal is representative of said first optical transmission path monitoring parameters,
3 said first monitoring information signals being based on said first portion.

4. (Canceled)

1 5. (Original): The method of claim 4 wherein said end-point processing
2 includes transmitting monitor processing result signals to said first location.

1 6. (Original): The method of claim 4 wherein said first location is an optical
2 transmission network administration device.

7. (Canceled)

1 8. (Currently amended): In an optical transmission device disposed in an
2 optical transmission path for transmitting an optical signal comprising an overhead portion and a
3 payload portion, a method for monitoring said optical transmission path comprising:

4 receiving a first instruction ~~signal of a first type~~ which instructs insertion of
5 monitoring information signal in an overhead portion of a received transmission signal, wherein
6 when a first transmission signal is received, then and in response thereto ~~modifying a an~~
7 overhead portion of said first received ~~transmission signal~~ to include a first monitoring
8 information signal to produce a modified transmission signal, and transmitting said modified
9 transmission signal;

10 receiving a second instruction ~~signal of a second type and in response thereto~~
11 ~~transmitting a second received transmission signal, a portion of which~~ which instructs
12 transmission of a monitoring information signal contained in an overhead portion of a received
13 transmission signal, wherein when a second transmission signal is received that includes a
14 second monitoring information signal in an overhead portion thereof, ~~said transmitting being~~
15 ~~performed then said second transmission signal is transmitted~~ without modification to said
16 second monitoring information; and

17 receiving a third instruction ~~signal of a third type and in response thereto~~
18 ~~performing which instructs processing of a monitoring information signal contained in an~~
19 overhead portion of a received transmission signal, wherein when a third transmission signal is
20 received that includes a third monitoring information signal then end-point processing based on
21 is performed on said third monitoring information signal, said third monitoring information
22 signal being ~~a~~ in an overhead portion of a said third received transmission signal.

1 9. (Original): The method of claim 8 wherein a first portion of said first
2 instruction signal is representative of optical transmission path monitoring parameters, said first
3 monitoring information signal being based on said first portion.

1 10. (Original): The method of claim 8 wherein said first, second, and third
2 instruction signals are received from a first location.

1 11. (Original): The method of claim 10 wherein said end-point processing
2 includes transmitting monitor processing result signals to said first location.

1 12. (Original): In an optical path comprising a plurality of optical
2 transmission devices for transmission of a transmission signal therealong, each device receiving
3 said transmission signal and transmitting said transmission signal, a method for monitoring said
4 optical transmission path comprising:

5 identifying a first set of said optical transmission devices associated with a first
6 monitoring zone, said first set of optical transmission devices including first and second optical
7 transmission devices designated as first and second end-point devices, the remaining optical
8 transmission devices in said first set being designated as first relay devices;

9 identifying a second set of said optical transmission devices associated with a
10 second monitoring zone, said second set of optical transmission devices including third and
11 fourth optical transmission devices designated as third and fourth end-point devices, the
12 remaining optical transmission devices in said second set being designated as second relay
13 devices;

14 transmitting first and second insertion-type instruction signals respectively to said
15 first and third end-point devices, said first end-point device thereby modifying said transmission
16 signal by inserting a first monitoring information signal into a first portion of said transmission
17 signal and transmitting said transmission signal as modified, said third end-point device thereby
18 modifying said transmission signal by inserting a second monitoring information signal into a
19 second portion of said transmission signal and transmitting said transmission signal as modified;

20 transmitting passthrough-type instruction signals to said first relay devices and to
21 said second relay devices; and
22 transmitting end-point processing type instruction signals to said second and
23 fourth end-point devices.

1 13. (Original): The method of claim 12 further including receiving user-
2 provided information representative of said first and second monitoring zones, wherein said
3 optical transmission devices comprising said first and second sets are dependent on said user-
4 provided information.

1 14. (Original): The method of claim 12 wherein if said first and second
2 monitoring zones overlap such that some of said optical transmission devices belong both to said
3 first set of optical transmission devices and to said second set of optical transmission devices,
4 then said first and second portions of said transmission signal are different portion.

1 15. (Original): The method of claim 12 wherein if said first and second
2 monitoring zones do not overlap, then said first and second portions of said transmission signal
3 are the same portion.

1 16. (Original): The method of claim 12 further including for each of said first
2 relay devices and each of said second relay devices, in response to receiving said passthrough-
3 type instruction signals, transmitting a received transmission signal which includes monitoring
4 information signals in a manner that does not modify said monitoring information signals.

1 17. (Original): The method of claim 12 further including for each of said
2 second and fourth end-point devices, in response to receiving said end-point processing type
3 instruction signal, performing end-point processing based on monitoring information signals
4 contained in a received transmission signal.

1 18. (Original): The method of claim 12 wherein a first portion of each of said
2 first and second insertion-type instruction signals is representative of optical transmission path
3 monitoring parameters, said first monitoring information signals being based on said first portion
4 of said first insertion-type instruction signal, said second monitoring information signals being
5 based on said first portion of said second insertion-type instruction signal.

1 19. (Original): The method of claim 12 further including transmitting said
2 insertion-type, said passthrough-type, and said end-point type instruction signals from a first
3 location.

1 20. (Original): The method of claim 19 wherein said end-point processing
2 includes transmitting monitor processing result signals to said first location.

21-35. (Canceled)